Focus on Recycling credits for metal-bearing sludge

Hazardous Waste and Toxics Reduction Program

The Department of Ecology (Ecology) encourages pollution prevention through methods such as source reduction and waste recycling. Ecology recognizes the benefits of reclaiming materials from waste streams by granting "recycling credits." Credit for recycling helps reduce the hazardous waste fees imposed by the *Hazardous Waste Fee Regulatio*n, Chapter 173-305 WAC.

The recycling credit insures that hazardous waste generators avoid paying hazardous waste fees for the materials that have been recycled. The credit does not apply to wastes that are treated and/or disposed. *The recycling credit does not affect generator status*. Most reclamation and recycling processes recover only part of incoming waste streams. Consequently, those portions of waste streams that are ultimately disposed of are not eligible for recycling credit.

Metal-bearing sludge is commonly sent for off-site reclamation. All of the sludge enters the recycling process. However, only a portion of the reclaimed sludge (e.g., the metals) is eligible for a recycling credit. The balance of the sludge usually is disposed. Although the following guidance cannot cover every circumstance, the maximum recycling credit allowed for metal-bearing sludge can be calculated by the methods outlined below:

Sludge sent for metal recovery

For metal-bearing sludge sent for metal reclamation (smelting or primary metals manufacturing), *the maximum allowable recycling credit is equal to the weight percentage of the metals to be reclaimed in the sludge*.

EXAMPLE: An F006 sludge is 40 percent water by weight. The dry solid contains 20 percent lead (Pb) and ten percent cadmium (Cd). The remainder contains iron hydroxide, silicon dioxide, and other non-hazardous constituents. The generator sends the sludge to a reclamation facility that extracts the cadmium and lead. The balance goes to a cement kiln. What is the recycling credit?

CALCULATION: The solids content is 60 percent of the total weight. The reclaimed elements, cadmium and lead, make up a total of 30 percent of the solid. The maximum allowable recycling credit is 18 percent (0.6 x 0.3 = 0.18). *Note: stabilization via a cement kiln is considered disposal*.

Sludge used in the chemical industry

Some chemical manufacturing processes use metal-bearing sludge as a raw material. In these cases, the maximum allowable recycling credit equals the percentage of the material that does not require additional processing to be incorporated into a product for sale.

EXAMPLE: A chrome plater evaporates a spent chromic acid bath, leaving sludge made up of 20 percent water, 70 percent chromic acid and ten percent other contaminants. The generator sends the material to a processing facility where it is reacted with sodium carbonate and lime to from sodium chromate. A leather-goods manufacturing company buys the sodium chromate for use in their tanning process. What is the recycling credit?

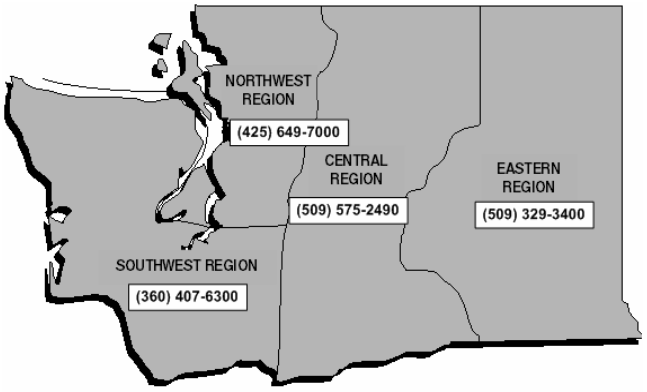
CALCULATION: Since all of the chromic acid is incorporated into the sodium chromate (chromic acid is only about 51 percent chromium by weight), the full amount of chromic acid can apply to the recycling credit. The maximum allowable recycling credit is 70 percent.

Prevent pollution at the source

Defining the recycling credit for metal-bearing sludge in this way promotes efficient material use and recycling while encouraging facilities to reduce the quantity of their hazardous sludge. This practice also encourages facilities to maximize the metals content in their sludge, fostering pollution prevention activities where it is most effective – at the source.

Facilities requesting a recycling credit for metal-bearing sludge should retain an analysis of a representative sample of the sludge sent for reclamation. Sludges sent for reclamation that are not listed wastes may be eligible for exemption from the *Dangerous Waste Regulations*, Chapter 173-303 WAC. To find out if your sludge qualifies for an exemption, contact your Ecology regional office hazardous waste unit. For assistance reducing the quantity of hazardous sludge produced at your facility, contact your Ecology regional office toxics reduction unit.

The Hazardous Waste and Toxics Reduction Program is responsible for managing and reducing hazardous waste and toxic substances in Washington State. If you have a question, please contact a toxics reduction or hazardous waste specialist at your nearest regional office.



If you need this information in an alternate format, please call the Hazardous Waste and Toxics Reduction Program at 360-407-6700. If you are a person with a speech or hearing impairment, call 711, or 800-833-6388 for TTY.